

10/54172  
PATENT COOPERATION TREATY

PCT/EP2003/014906



**PCT**

**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference  PCT 1003	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No.  PCT/EP2003/014906	International filing date (day/month/year)  24 December 2003 (24.12.2003)	Priority date (day/month/year)  02 January 2003 (02.01.2003)
International Patent Classification (IPC) or national classification and IPC  B21C 23/22		
Applicant  FRIEDRICHSHS, Arno		

<ol style="list-style-type: none"> <li>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</li> <li>2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.</li> </ol> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of <u>6</u> sheets.</p> <ol style="list-style-type: none"> <li>3. This report contains indications relating to the following items:</li> </ol> <ul style="list-style-type: none"> <li>I <input checked="" type="checkbox"/> Basis of the report</li> <li>II <input type="checkbox"/> Priority</li> <li>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li>IV <input type="checkbox"/> Lack of unity of invention</li> <li>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI <input type="checkbox"/> Certain documents cited</li> <li>VII <input type="checkbox"/> Certain defects in the international application</li> <li>VIII <input type="checkbox"/> Certain observations on the international application</li> </ul>
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Date of submission of the demand  30 July 2004 (30.07.2004)	Date of completion of this report  29 March 2005 (29.03.2005)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/014906

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

- the international application as originally filed  
 the description:

pages \_\_\_\_\_ 1, 2, 4-13 \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_ \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_ 3, 3a \_\_\_\_\_, filed with the letter of 15 December 2004 (15.12.2004)

- the claims:

pages \_\_\_\_\_ \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_ \_\_\_\_\_, as amended (together with any statement under Article 19)  
 pages \_\_\_\_\_ \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_ 1-16 \_\_\_\_\_, filed with the letter of 15 December 2004 (15.12.2004)

- the drawings:

pages \_\_\_\_\_ 1/3-3/3 \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_ \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_ \_\_\_\_\_, filed with the letter of \_\_\_\_\_

- the sequence listing part of the description:

pages \_\_\_\_\_ \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_ \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_ \_\_\_\_\_, filed with the letter of \_\_\_\_\_

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).  
 the language of publication of the international application (under Rule 48.3(b)).  
 the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.  
 filed together with the international application in computer readable form.  
 furnished subsequently to this Authority in written form.  
 furnished subsequently to this Authority in computer readable form.  
 The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
 The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4.  The amendments have resulted in the cancellation of:

- the description, pages \_\_\_\_\_  
 the claims, Nos. \_\_\_\_\_  
 the drawings, sheets/fig \_\_\_\_\_

5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

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PCT/EP 03/14906**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	1-16	YES
	Claims		NO
Inventive step (IS)	Claims	1-16	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-16	YES
	Claims		NO

**2. Citations and explanations****1. This report refers to the following document:**

D1: JP-A-60 059001.

**2. Independent claim 1:**

Document D1 discloses in its abstract and in figures 3 to 5:

a method of producing a rod-shaped carbide cutting tool that has at least two materials of different hardness (drill bit - see figures 1 and 2; though not mentioned explicitly in the abstract, it is nonetheless clear that two different hard metal alloys (sintered hard alloy powder) are pressed, one necessarily being harder than the other), the first material forming a rod-shaped support for the second material (outer material of the drill bit forms support for the core material), where

- the first material is provided in the form of a plastic mass flux within a first extrusion press tool (24, 25, 17),

- the second material is provided in the form of a plastic mass flux within a second extrusion press tool (27, 28, 21),
- the second material is fed to the first extrusion press tool and forced into the first mass flux within the first extrusion press tool (17),
- a combined plastic mass flux of first and second materials is delivered from the first extrusion press tool (17) as a rod-shaped body, the first material forming a support for the second material,
- the rod-shaped body delivered from the first extrusion press tool is machined into a carbide cutting tool (figures 1 and 2).

The subject matter of claim 1 differs from D1 in that the second material is fed to the first extrusion press tool through a channel joining the two extrusion press tools, and in that the requisite volumetric flowrate is adjusted as a function of the output signals of a sensor.

By adjusting the volumetric flowrates during the pressing, the distribution of the two materials can be varied over the length of the tool. Thus, for example, the harder material, as cutting material, may be forced in only in the front region of the tool, whereas the rear region of the tool is made exclusively of the softer material.

An adjustment of the volumetric flowrates as a

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function of sensor signals is not addressed in the prior art.

The subject matter of claim 1 is novel and inventive (PCT Article 33(2) and (3)).

**3. Independent claim 11:**

The subject matter of claim 11 is an apparatus suitable for implementing the method according to claim 1.

The sensor and the control unit make it possible to vary the volumetric flowrates as stipulated by the method according to claim 1 (see point 2 above).

The subject matter of claim 11 is novel and inventive (PCT Article 33(2) and (3)).

**4. Dependent claims 2 to 10 and 12 to 16:**

Dependent claims 2 to 10 and 12 to 16 show further embodiments of the method according to claim 1 and the apparatus according to claim 11, respectively. Their subject matter is thus also novel and inventive (PCT Article 33(2) and (3)).